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EXAMINER

ROY, SIKHA

ART UNIT PAPER NUMBER

2879

DATE MAILED: 08/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/017,285

Applicant(s)

CLAUS ET AL.

Examiner

Sikha Roy

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-58 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: _____

DETAILED ACTION

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the getter positioned inside as claimed in claims 16-19 must be shown or the feature(s) canceled from the claim(s).

The alternating current supplying to the first and second leads as claimed in claim 25 and the direct current supplying to the first and second leads as claimed in claim 26 must be shown or the feature(s) canceled from the claim(s).

No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 - 4,6,7,20,21,30 - 34,36, 49 and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,468,168 to Balaschak et al.

Regarding claim 1 Balaschak discloses (Fig.14 column 11 lines 14-25) a discharge lamp 112 comprising a first lead 130 to enter the light source from one end and a second lead 134 to enter the light source from the same end.

Claim 30 essentially recites the same limitation as of claim 1 and hence is rejected for the same reason

Regarding claim 2 Balaschak et al. disclose (Fig. 14 column 7 lines 18-55, column 8 lines 23-29, column 11 lines 14-25) a discharge lamp comprising a base 138 wherein the first lead 130 passes through the base wherein the base forms a first airtight seal around the first lead, wherein the second lead 134 passes through the base wherein the base forms airtight seal, a first electrode 140 attached to the first lead 130, second electrode 142 attached to the second lead 134, a bulb 114 filled with a gas and hermetically sealed around the outer periphery of the base.

Claim 31 essentially recites the same limitation as of claim 1 and hence is rejected for the same reason

Regarding claims 3 and 32 Balaschak discloses (column 5 lines 23-40) the base 38 is made of glass (fused silica).

Regarding claims 4 and 33 Balaschak discloses (column 8 lines 23,24) the bulb is made of glass.

Regarding claims 6 and 34 Balaschak discloses (column 5 lines 23-26) the thermal expansion coefficient of the base is same as that of the envelope. The materials having same coefficient of thermal expansion enable a high quality seal.

Regarding claims 7 and 36 Balaschak discloses (column 6 line 67, column 7 lines 1-5) that the thermal expansion coefficient of the base 38 is same as that of the first and second leads 30.

Referring to claim 20 it is clearly evident from Fig. 15 that the gap between the first and second electrodes is parallel to the first and second leads.

Referring to claim 21 Balaschak discloses in Fig. 14 that the gap between the first and second electrodes 140,142 is perpendicular to the first and second leads.

Claims 49 and 50 essentially recite the same limitations as of claims 20 and 21 respectively and hence are rejected for the same reasons.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,468,168 to Balaschak et al.

Regarding claim 5 Balaschak does not disclose the thermal expansion coefficient of the base to be greater than $1.0 \times 10^{-6}/K$.

Balaschak discloses the thermal coefficient of the base being approximately equal to that of the leads made of molybdenum. The thermal coefficient of expansion of molybdenum is known to be in the range of 4.2×10^{-6} to $5.0 \times 10^{-6}/K$ (U.S. Patent 4,972,988 to Ohdate). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to specify the thermal expansion coefficient of the base being same as that of the leads of the lamp of Balaschak to be greater than $1.0 \times 10^{-6}/K$.

Claim 35 essentially recites the same limitation as of claim 5 and hence is rejected for the same reason.

Claims 22, 23 and 51,52 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,468,168 to Balaschak et al.

Regarding claims 22 and 23 Balaschak discloses the claimed invention except for the length of the gap between the first and second electrodes being less than 80% (claim 22) and less than 75% (claim 23). It would have been obvious matter of design choice to specify the length of the gap between the electrodes since the applicant has not disclosed this specific gap length between the electrodes solves any stated problem or is for any particular reason and it appears that the invention would perform equally well with the discharge lamp of Balaschak.

Claims 51 and 52 essentially recite the same limitation as of claims 22 and 23 respectively and hence are rejected for the same reason.

Claims 9,10, 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,468,168 to Balaschak et al. and further in view of JP 57143243 to Kumabe et al.

Regarding claim 9 Balaschak does not disclose the electrodes are made of tungsten.

Kumabe in analogous art of discharge lamps disclose electrodes made of tungsten.

The selection of known material for a known purpose is generally considered to be within the skill of the art. Therefore it would have been obvious to use tungsten for the electrodes as taught by Kumabe for the electrodes of the lamp of Balaschak because the selection of known material for a known purpose is within the skill of the art.

Claim 38 essentially recites the same limitation as of claim 9 and hence is rejected for the same reason.

Regarding claim 10 Balaschak does not disclose the step of attaching the first electrode to the first lead comprising spot welding the first electrode to the first lead.

Kumabe discloses (see Constitution) spot welding of the electrode and the lead is done for attaching the tungsten electrode with molybdenum lead-in foil. Kumabe further discloses that this method provides a long-life discharge lamp without producing cracks and hence the workability and reliability of lamps are improved.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to specify the spot welding of the first electrode with the first lead as disclosed by Kumabe for attachment step of making the lamp of Balaschak for providing a long-life discharge lamp without producing cracks and hence improving the workability and reliability of the lamp.

Claim 39 essentially recites the same limitation as of claim 10 and hence is rejected for the same reason.

Claim 11 –15 and 40-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,468,168 to Balaschak et al. and JP 57143243 to Kumabe et al. and further in view of JP 06223783 to Matsushita Denki Sangyo KK.

Regarding claim 11 Balaschak and Kumabe do not disclose the melting of the welding agent positioned between the first electrode and the first lead during spot welding.

JP 06223783 in relevant art of making discharge lamp discloses welding agent of platinum film melted on the junction between the electrode and the lead during welding. It is further noted that this is an easy and known method of attaching the electrode to the lead.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use welding agent (platinum) positioned between the first electrode and the first lead as disclosed by JP 06223783 during attachment step of lamp of Balaschak.

Claim 40 essentially recites the same limitation as of claim 11 and hence is rejected for the same reason.

Referring to claim 12 Balschak, Kumabe and JP 06223783 disclose the claimed invention except for the melting point of the weld agent being higher than the operating temperature of the lamp and lower than the melting points of first lead and the first electrode. The examiner notes that discharge lamp of Balaschak and Kumabe having the tungsten electrodes and molybdenum leads and using platinum as weld agent as taught by JP 06223783 intrinsically has the weld agent with melting point higher than the operating temperature of the lamp and the melting points of tungsten electrode and molybdenum leads.

Claim 41 essentially recites the same limitation as of claim 12 and hence is rejected for the same reason.

Regarding claims 13 and 42 Kumabe discloses the electrode made of tungsten and the lead is made of molybdenum.

Regarding claims 14 and 43 JP 06223783 discloses platinum used as welding agent.

Regarding claim 15 and 44 Balaschak, Kumabe and JP 06223783 do not disclose tantalum as weld agent. The selection of known material for a known purpose is generally considered to be within the skill of the art. Therefore it would have been obvious to use tantalum instead of platinum because the selection of known material for a known purpose is within the skill of the art.

Claims 16,19,8,27, 28, 45,48,37,56,57 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,468,168 to Balaschak et al. in view of U.S. Patent 6,140,769 to Bruggemann et al.

Claim 16 differs from Balaschak in that Balaschak does not exemplify the lamp comprising a getter inside the discharge light source.

Bruggemann in the same field of endeavor of incandescent lamp discloses (column 4 lines 56-60 Fig. 2) a getter 20 in the form of powder coating inside the discharge light source. It is to be noted that the getter absorbs water vapor from inside the discharge space.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include a getter as disclosed by Bruggemann inside the discharge light source of Balaschak for absorbing water vapor from inside.

Claim 45 essentially recites the same limitation as of claim 16 and hence is rejected for the same reason.

Regarding claims 19 and 48 Bruggemann discloses the getter made of zirconium.

Regarding claims 8 and 37 Bruggemann discloses (column 2 line 35) power of the lamp 25 W .

Regarding claims 27, 56 and 28 , 57 Bruggemann discloses (column 4 lines 50-54) the lamp having xenon as filling gas to a pressure of 2-15 bar.

Alternately claims 16-19 and 45-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,468,168 to Balaschak et al. in view of U.S. Patent 4,645,979 to Chow.

Claim 16 differs from Balaschak in that Balaschak does not exemplify the lamp comprising a getter inside the discharge light source.

Chow in analogous art of discharge lamp discloses (column 3 lines 35-40) getter 3 inside the discharge light source absorbing harmful discharge gas from inside. It is further disclosed that employing a getter lengthens the life of the discharge lamp.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to employ getter as taught by Chow inside the discharge lamp of Balaschak for absorbing harmful discharge gas from inside and lengthening the life of the discharge lamp.

Regarding claims 17,18,19 Chow discloses the getter is made of tantalum, titanium or zirconium.

Claims 45-48 essentially recite the same limitations as of claims 16-19 respectively and hence are rejected for same reasons.

Claims 24 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,468,168 to Balaschak et al. in view of U.S. Patent 5,006,088 to Tokuhara et al.

Regarding claim 24 Balaschak does not disclose positioning a brace attached to the first lead between the first electrode and the base and attached to the second lead between the second electrode and the base.

Tokuhara in the relevant art of incandescent lamp discloses (Fig. 1 column 3 lines 10-15) a brace (vitreous bridge) 22 within the envelope rigidly interconnected to the leads. Tokuhara further discloses that the bridge retains the lead wires at a proper spacing from each other.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include a brace as disclosed by Tokuhara attached to the leads in between the electrodes and the base of the lamp of Balaschak for retaining the lead wires at a proper spacing from each other.

Claim 53 essentially recites the same limitation as of claim 24 and hence is rejected for the same reason.

Claims 25,54 and 26,55 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,468,168 to Balaschak et al. in view of U.S. Patent 6,211,616 to Takeuti et al.

Regarding claims 25 and 26 the Examiner notes that the discharge lamp of Balaschak inherently comprises current supplying source (direct or alternating) for the lamp to operate. As evidenced by Takeuti (column 6 lines 1-5,49-51) the power supplying wire can be connected to a direct current or alternating current power source.

Claims 54 and 55 essentially recite the same limitations as of claims 25,26 respectively and hence are rejected for the same reasons.

Claims 29 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,468,168 to Balaschak et al. in view of JP 2000231906 to Yano.

Claim 29 differs from Balaschak in that Balaschak does not exemplify the closed end of the bulb is a lens.

Yano in same field of endeavor of discharge lamp discloses(Fig. 3) the light emitting part of the light transmitting bulb is formed in a convex lens shape. Yano further discloses that this lens shape of the bulb enhances the luminous intensity.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the end of the bulb of Balaschak a convex lens as taught by Yano for enhancing the luminous intensity.

Claim 58 essentially recites the same limitation as of claim 29 and hence is rejected for the same reason.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 4,866,341 to Ichiga et al. discloses a discharge lamp with base for sealing the lamp. U.S. Patent 5,001,395 to Barthelmes et al. discloses single ended high pressure discharge lamp. U.S. Patent 5,277,639 to Nagata et al. and JP 11250806 to Matsushita Electronics disclose electrode assembling method.

Art Unit: 2879

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

S.R.

Sikha Roy
Patent Examiner
Art Unit 2879

Ashok Patel
ASHOK PATEL
PRIMARY EXAMINER